III. STANDS

A. DEFINITION

A stand is the smallest unit on which managerial action can take place. It can be distinguished from adjacent stands by any one of a number of parameters including species composition, age, stocking density, diameter of trees, health, site index, management objectives, and treatments.

The featured type is the type and size class currently dominating the site. It is the single predominant type to be managed through to rotation age or be maintained until regenerated or converted.

B. STAND NUMBERING

1-399	Standard consecutive stand numbers.
400-499	Grass openings, natural and created.
500-699	Reserved - not for use.
700-799	Luce County lease lands.
800-899	Former Consumers Power Company lands on which they have reserved existing pine plantations for a period not to exceed 50 years.
900-999	U.S. Fish and Wildlife Service, Kirtland's Warbler habitat which we include in operations inventory.

Each stand shown or created within a compartment shall have a unique number. This will aid in the identification of any specific stand which either now or eventually may receive an independent treatment. GIS requires separate numbering of each identified polygon. New numbers should be the next available number in sequence within the compartment.

An existing, stand which will not be treated uniformly, should be divided into separate stands. At times it may be uncertain as to what part of the main stand will be treated differently. Examples of this might be small patch cuts within a larger cedar stand, opening creations somewhere within an existing stand, or a hardwood stand containing small aspen clones which will be clearcut.

To accommodate these situations, insert an arbitrary stand number and stand lines for the prescribed portion within the main stand. Identify it as such in the comments, and create a new stand in OIPC. The precise location, area, and information for the stand to be treated differently needs to be updated at the time of treatment. Therefore, the original estimations should be made as closely as possible.

When the cutting is distributed throughout the stand, a selection or shelterwood harvest may be prescribed (based on residual stocking) with the comments indicating a group selection.

C. MINIMUM SIZE

In general, minimum stand size on which records will be kept is ten acres. However, special or unique stands and stands within influence zones (travel, water, recreation, special use, etc.) are to be classified and recorded down to one acre. Each stand is to

have an influence zone classification. Special or unique stands have special historical or botanical value or other unique features that need recognition. A unique stand/area within a larger stand can be described as an inclusion. These typically are less than ten (10) acres in size.

If a polygon is mapped, it must have a corresponding stand in OIPC – one polygon per stand record.

Grass openings may be mapped down to one acre in size. Separate stand numbers should be assigned to each opening.

In general, unimproved roads (less than half a chain wide), clearings less than one acre in size, ponds less than 1/2 acre and streams less than 33 feet in width are included in the surrounding type acreage. Improved roads and larger areas of the above mentioned cover or land categories are classified as stands and acreage figures obtained. Smaller areas may be separately classified as stands at local discretion, if benefits of identification will outweigh the additional costs in time and money.

D. SAMPLING

Each stand should have a minimum of five sample points (10 factor). A maximum of ten points is usually sufficient for larger stands. Exceptions include extremely uniform stands such as some plantations or small stands (less than 10 acres). For these stands, 2 or 3 points may be acceptable; the judgement of the stand examiner should be used. Note reasons in comments. Use good judgment. Stand delineation should be done from air photos and existing type maps before leaving the office. Predetermine a sampling route, sampling the stand with equally spaced plots. Adjustments in stand boundaries and sampling route may be necessary based on field experience.

E. SAMPLING FOR SECOND AND SUBSEQUENT INVENTORIES

A considerable amount of time can be saved (both in the field and the office) with second and subsequent inventories. In some cases, only stand updates will be needed. In others, additional plot information will need to be gathered. Stand examiners need to verify that information is correct, and/or assure that all data are updated.

Individual forest managers may feel that earlier inventory information is substantially inadequate. The manager may then direct that a more complete inventory be conducted.

Table 1 outlines when particular fields should be updated.

TABLE 1

CONDITIONS WHEN PARTICULAR FIELDS SHOULD BE UPDATED

DATA	TYPE	CONDITIONS REQUIRING UPDATING
forest	ID	may change
county	ID	no change
compartment	ID	may change
stand no.	ID	May need change due to treatment or better stand delineation
stand area	SITE	same as above
area class	SITE	change unlikely
influence zone	SITE	change unlikely
data year	STD	See “data year”, pages 6.
data source	STD	See “data source”, pages 7.
FDF status	TRT	may change depending on treatment prescribed
type-size-density	STD	Based on new stand examination or treatment update.
stand condition	STD	Based on new stand examination or treatment update
method of cut	TRT	Based on new stand examination or treatment update
merchantability	TRT	Based on new stand examination or treatment update
treatment period	TRT	update
reproductive status	STD	Based on new stand examination or treatment update
management objective	STD	Will probably stay the same.
cultural need	TRT	Based on new stand examination or treatment update
cultural method	TRT	Based on new stand examination or treatment update
cultural treatment priority	TRT	Based on new stand examination or treatment update
TSIBA	TRT	Based on new stand examination or treatment update
cutting priority	TRT	Based on new stand examination or treatment update
total basal area	STD	Based on new stand examination or treatment update
average DBH	STD	Based on new stand examination or treatment update
understory TSD	STD	Based on new stand examination or treatment update
erosion hazard	SITE	Change unlikely
watershed treatment	SITE	Change unlikely
special mgt area potential	SITE	Change unlikely
special wildlife practices	TRT	Based on new stand examination or treatment update
ground cover	STD	Based on new stand examination or treatment update
soil type	SITE	Possible change due to new soil surveys
insect and disease	STD	Based on new stand examination or treatment update
species for site index (numeric)	SITE	Change only if listed species does not reflect featured species or management objective species.
stand year of origin	STD	Change in age of featured stand.
site index	SITE	Change only if change in site species or original site index data are suspect.
Species-Prod. HT.BA	STD	Change if cursory exam indicates a need for new plot data.

F. DATA COLLECTING AND CODING

For field data collection, use the Stand Tally form (R4153) or Ancillary Tally form, (R4153-1).

On the upper half of the form fill in: name of stand examiner, date, forest management unit, compartment, stand number, township, range, section, and subdivision. Below this information is a box for logging in sample point data. Use the bottom row average to determine featured cover type and stocking density.

CODING
ENTRY AND REMARKS

Stand Number (STD NO)

Stand Area (STD AREA)

Area Classification (AC)

1. Commercial forest land - Land capable of producing more than 20 cubic feet/acre/year of timber and not removed from timber production. (See Table 2 to help determine productivity level).

2. Non timber producing forest land - Land supporting trees, but not capable of producing more than 20 cubic feet/acre/year of any timber species. Examples: treed bogs, stagnant swamps, some lowland brush, and very poor sites either natural or human caused.

3. Timber producing forest land reserved - Land capable of producing more than 20 cubic feet/acre/year of timber, but removed from timber production by lease or land use commitment. Examples: wildlife openings (both grass and upland brush), wilderness or natural areas where no cutting is allowed, utility lines, oil and gas well sites, etc.

4. Non timbered forest land - Bogs, marshes, most lowland brush, muskegs, rock outcrops, improved roads, gravel, and sand.

5. Water - Ponds, lakes, large streams.

TABLE 2

MINIMUM SITE INDEX FOR COMMERCIAL FOREST LAND BY SPECIES --20 cubic ft/acre/year = .25 cords/acre/year. This has been translated into site index for most species we encounter. The following list shows by species the minimum site index for classified commercial forest land.

SPECIES	COMMERCIAL FOREST LAND	SPECIES	COMMERCIAL FOREST LAND
Aspen	46+	Red Pine	36+
Balsam Fir	26+	Sugar Maple	46+
Beech	46+	Tamarack	36+
Black Cherry	46+	White Ash	46+
Black Oak	36+	White Birch	46+
Black Spruce	26+	White Cedar	26+
Jack Pine	36+	White Oak	46+
Red Maple	46+	White Spruce	26+
Red Oak	36+	White Pine	26+

SPECIES	COMMERCIAL FOREST LAND	SPECIES	COMMERCIAL FOREST LAND
		Yellow Birch	46+

Influence Zone (IZ)

1. General Forest - The General Forest Zone includes all state forest lands not classified as any of the other influence zones listed below. This zone contains most of the commercial forest land and provides most of the opportunity for management of timber, wildlife habitat, and dispersed recreational opportunities.

2. Travel - This zone includes the land area subject to frequent viewing by the public. Visual quality and aesthetics should be especially considered during any management activities. The zone consists primarily of the lands along federal, state, regularly maintained county roads, and selected trails and roads. In depth, it includes the area easily seen from the travel route or within 5 chains of it. Occasionally, a wider zone may be necessary on long sloping hillsides. Where this zone overlaps the Water Influence Zone, specifications for the Water Influence zone shall prevail.

3. Water - This zone is made up of state forest frontage on lakes, certain ponds, main streams, and feeder streams where water quality or water-oriented recreation should be especially considered during management activities. This zone includes the areas visible to people engaged in water-oriented activities. This zone will generally be a strip not less than 100 feet or more than 330 feet from the water. A wider zone may be necessary to protect longer vistas or where it is needed for adequate water quality protection.

4. Deer yard - A forested area generally composed of conifers, lowland brush, lowland hardwoods or a combination of these types where deer concentrate during periods of severe cold and/or deep snow. Usually all stands within 1/4 mile of the deer yard should be included in the deer yard influence zone.

5. Other Wildlife – This zone is for stands that are managed primarily for a particular wildlife species (e.g. Kirtland's Warbler); or stands whose management is impacted by the presence or potential for certain wildlife species (e.g. red-shouldered hawk). Use this code where management is primarily for these kind of wildlife species or where management is influenced by the presence or potential of certain species.

6. Recreation Sites - This zone includes developed recreation facilities such as campgrounds, trails, pathways, and areas within the visual landscape of these facilities. Treatments that are prescribed will enhance or protect the recreation value of the site. Designation of recreational influence zones can vary by the visual impact of management activities to the recreational facility user.

7. Wild or Natural Areas

- Areas that are formally designated under Part 351 of Act 451 of 1994 (Natural Resources & Environmental Protection Act, Wilderness and Natural Areas)

- Areas that, although not formally designated, contain inherent natural qualities to be protected.

8. Undedicated - None of the above, explain in comments.

9. Stands under lease or long term agreement (pipelines and electrical transmission lines, military lease land).

   NOTE: When a stand is affected by more than one influence zone, choose the influence zone which is most crucial.

Data Year (YR)

Record the four digits of the year the data represents.

Deciding how to code **Data Year** and Data **Source**:

1. If the stand examiner does any one of the following:

   - Complete field examination
   - Verification of current data through walk-through field inspection
   - Estimate stand data

   Then **Data Year** must be changed to the current calendar year and the Data **Source** must be coded as "1".

   (Note: an estimate is to be an educated guess, but by far is not the preferred method for updating stand information! If an estimate is used for any information, this must be noted in the comments.)

   Even if the stand examiner makes no changes in the data as a result of one of the above three actions, the **Data Year** still must be updated to the current calendar year and the Data **Source** must be changed to "1". The change is to be made because the stand examiner confirmed the existing data as correct in the current year.

2. If the new data or confirmed existing data were from information in a Forest Treatment Proposal (FTP) completion report, a Timber Cutting Report (TCR) or other treatment report, then the **Data Year** must be changed to the calendar year of the report and the Data **Source** must be coded as "4".

3. If the new data or confirmed existing data were from information gathered by a special survey, like a regeneration survey, then the **Data Year** must be changed to the calendar year of the survey and the Data **Source** must be coded as "3".

4. If all the stand description data for a particular stand are transferred *verbatim* (without checking or clarification) from the prior database, then the **Data Year** must remain as it is in the prior database and the Data **Source** is to be changed to "2". (This is absolutely the least preferred method.)

5. If the data has been derived from information gathered by the **IFMAP** inventory system, code the current **Data Year**. The Data **Source** will be "5".

(Background information: OI databases are used by both DNR and some members of the public. Ongoing analyses of various types estimate growth up to the current year based on the "data year" listed. Therefore, this is an extremely important field in the OI databases to represent accurately.)

Data Source (SO)

1. Field examined/verified under current procedures in the year coded in Data Year.
2. Data transferred from old examination or survey records (no field exam).
3. Data from intensive surveys such as regeneration surveys.
4. Updated from treatment report.
5. Projected by automatic data processing programs or IFMAP.

NOTE: See text above for Data Year for guidance on coding Data Source.

Forest Development Fund Bonding (FDF Status)
See Appendix E for approved treatment regimes.

0. Default. Stands which are not being treated or do not currently qualify for FDF funding under the approved treatment regimes (see Appendix E). Most stands will fall into this category.
1. Stand with FDF potential. Stands which qualify for treatment, but **are not** prescribed for treatment during this year of entry (YOE).
2. Stands which qualify for FDF treatment and **are prescribed** for treatment in the next decade under the approved treatment regimes.
3. Received treatment paid for by the sale of FDF bonds. This code will not be used until FDF bonds are sold.
4. Do not consider for FDF treatment. The decision was made at the compartment review not to treat with FDF bond funds.

Cover Type of Featured Stand (T) - (Must be an alphabetic character).

Cover type represents the true cover type, not the land use. For example, fire breaks would be "G" (or the actual cover), not "I". Campgrounds would be O6, J5, etc, with the designation noted in comment, influence zones and area class.

A. Aspen (upland)
B. Paper Birch
C. Northern White Cedar

D. Treed Bog

E. Swamp Hardwoods

F. Upland Spruce or Fir

G. Grass

H. Hemlock

I. Local Use (explain in Comments)

J. Jack Pine

K. Rock

L. Lowland Brush

M. Northern Hardwoods

N. Marsh

O. Oak

P. Balsam Poplar & Swamp Aspen & Swamp White Birch

Q. Mixed Swamp Conifers

R. Red Pine

S. Black Spruce – Swamp

T. Tamarack

U. Upland Brush

V. Bog or Muskeg

W. White Pine

X. Non-Stocked. No Understory for Understory Classification

Y. Sand Dunes

Z. Water

A couple of types may be confusing:

I. Local Use. Used for any stand of tree/shrub/plant species that you especially want to note and does not have its own unique species code. Examples include scotch pine, walnut, chestnut, norway spruce, ginseng, etc.

X. Non stocked. No Understory (when used as understory classification). Includes: roads, gravel pits, gravel parking lots, cemeteries, new well sites, building sites, access sites, understory code for stands without an understory.

G. Grass. Stands with non-woody, herbaceous, or grass vegetation and with less than 10 square feet of merchantable basal area. Includes seeded well sites, powerlines, and pipelines if stocked with G as above.

When classifying non-timber forest types such as water, rock, etc., classify management objective type and understory type the same as cover type.

Stand cover type is determined by answering three questions:

1. What is the most common species?
2. What is the most common size class (saplings, poles, or sawtimber)?
3. What is the total Basal Area?

Stands that meet all the following criteria are to be coded with the understory as the featured species.

- Overstory of less than 40 ft basal area.
- Understory is medium to well stocked.
- Management objective is the understory species.

For example: M4M3, A4A2, M4R2, R4A3, O7W3 are to be coded M3, A2, R2, A3, and W3 respectively, if, and only if, the management objective is for the understory species.

NOTE: If cover type is a tree type, the following codes must also be entered as a minimum:

- Size Density
- Stand Condition
- Management Status
- Understory Stocking
- Ground Cover
- Species for Site Index
- Stand Year of Origin
- Site Index

If cover type is a tree type in the pole or sawtimber stage, the following codes must also be entered as a minimum:

- Total Basal Area
- Average DBH
- Species Products

Size – Density (SD)

Cover type class is determined as pole size or sawlog size depending upon which class has the most basal area (all species combined). Density is determined by combining all species in both the pole and sawlog size classes. Sapling stand designations are determined by % stocking.

Thus by a single number a stand's size class and density is portrayed.

When there is less than 40 square feet of basal area of poletimber plus sawlogs over a younger understory that is adequately stocked (40% or greater), the understory may be featured. If the overstory can be removed commercially, a removal cut can be prescribed. However, if the management objective for the stand is for the understory, then the understory must be featured.

When both overstory and understory are each less than 40% stocked, the overstory should be featured.

0. Non-stocked (less than 17%)
1. Seedling-Sapling Poor, 100-399 trees/acre (18%-39% stocked)
2. Seedling-Sapling Medium, 400-699 trees/acre (40%-69% stocked)
3. Seedling-Sapling Well, 700 +trees/acre or a minimum of 70% stocking
4. Pole timber Poor, 10-39 sq. ft. BA (5" to 9.9" dbh)
5. Pole timber Medium, 40-69 sq. ft. BA (5" to 9.9" dbh)
6. Pole timber Well, 70 and over sq. ft. BA (5" to 9.9" dbh)
7. Sawtimber Poor, 10-39 sq. ft. BA (10" dbh and up)
8. Sawtimber Medium, 40-69 sq. ft. BA (10" dbh and up)
9. Sawtimber Well, 70 and over sq. ft. BA (10" dbh and up)

Stocking refers to total basal area in poletimber and sawtimber. "Poletimber" and "sawtimber" categories are to be based on the diameter class of the featured stand, not on the product type. For example, a decadent stand of 14" dbh aspen may produce few sawlogs, but still should be typed in the appropriate "sawlog" class. If the product class, in this example, is more appropriately pole timber, then pole timber should be coded in the product class codes (columns 59, 65, 71, 77).

Stand Condition (SC)

0. Nonstocked.
1. High risk-stands which will not survive until the next cutting, or will have a net volume loss before the next cutting period. Includes old and decrepit stands, but not those being intentionally managed for old growth.
2. Sparse-stands having less than 40 sq. ft. of BA/acre of growing stock trees.
3. Low quality-stands not sparse or high risk, but which have less basal area in ACCEPTABLE GROWING STOCK than the minimum basal area used in (2) above.
4. Mature-within 5 years of rotation age or beyond, but does not fit (1),(2), or (3) above.
5. Immature-any stand more than 5 years from rotation age which does not fit into any of the above categories.
6. Unevenaged-stands under uneven aged management which meet minimum stocking requirements.
7. Two aged.

8. Old growth potential or old growth.

9. In process of regeneration - once work has been done to establish a stand, whether it be site preparation for natural regeneration, planting, seeding, etc., the stand will be assigned a density code (0). When the final stocking survey confirms that an adequately stocked stand exists, the actual year of stand origin, density level and stand condition will be recorded on the compartment management record. During the interim period, year of origin will show the year site preparation, planting, or seeding was accomplished.

METHOD OF CUT (MOC) (All treatments listed below are to be considered commercial) IFMAP plans, when implemented, are to use the following treatment methods. For OIPC, start using these now (2005 YOE and beyond) with the following definitions and "OI Crossover" numbers:

REGENERATION HARVESTS (3 categories of methods):

Even-Aged Methods – regenerate and maintain a stand with a single age class

- **Clearcut** – the cutting of essentially all trees, producing a fully exposed microclimate for the development of a new age class. Regeneration is from stump sprouts, root suckers, natural seeding, direct seeding, planting, or advanced reproduction. Residual basal area (BA) generally runs from 0-10 square feet per acre (sq ft/acre).

  OI CROSSOVER – use codes **1** (final harvest), **5** (removal), or **6** (delayed removal) depending on the understory:

  Final Harvest – understory seedling sized or inadequate to stock stand after harvest
  Removal – understory fully stocked, sapling sized (>1" diameter), will flourish after harvest, and less than 20 years old.
  Delayed removal – understory fully stocked, sapling sized (>1" diameter), will flourish after harvest, and over 20 years old.
- **Patch or strip clearcut** – as above, but cutting is in groups, patches, or strips. The residual BA would depend on percentage of the stand left.

  OI CROSSOVER – use codes **1** (final harvest), **5** (removal), or **6** (delayed removal) depending on the understory as in clearcut (above).
- **Seed Tree** – the cutting of all trees except for a small number of widely dispersed trees retained for seed production and to produce a new age class in a fully exposed microclimate. Seed trees are usually removed after regeneration is established. Residual BA generally runs from 10-30 sq ft/acre.

  OI CROSSOVER – use code **2** (seed tree).
- **Shelterwood** – the cutting of most trees, leaving those needed to produce sufficient shade to produce a new age class in a moderated microenvironment. Can be done uniformly throughout the stand or in groups or strips, in one or more subsequent harvests. Residual BA is generally from 30-50 sq ft/acre. Residual trees are removed after regeneration is established.

  OI CROSSOVER – use code **3** (shelterwood-seed) or **7** (shelterwood-prep).

Two-Aged Methods – regenerate and maintain stands with two age classes. (Note – the resulting stand may be two-aged or tend towards an uneven-aged condition due to both an extended period of regeneration and the retention of reserve trees.

- **Clearcutting with reserves** – as described above, except that a varying number of reserve trees are not harvested to attain goals other than regeneration. Residual BA is generally 0-20 sq ft/acre. If the stand has scattered groups of residual trees, the BA could be higher in the groups without affecting the overall BA.

  OI CROSSOVER – see clearcut (above).
- **Seed tree with reserves** – as described above, except that some or all of the seed trees are retained after regeneration to attain goals other than regeneration. Residual BA is generally 10-30 sq ft/acre.

  OI CROSSOVER – see seed tree (above).

- **Shelterwood with reserves** – as described above, except that some or all of the shelter trees are retained after regeneration has become established to attain goals other than regeneration. Residual BA generally runs from 30-50 sq ft/acre.
  OI CROSSOVER – see shelterwood (above).

Uneven-Aged Methods – regenerate and maintain the stand with a multi-aged structure by removing some trees in all size classes.

- **Single tree selection** – individual trees within each size class are removed throughout the stand to promote the growth of remaining trees and to provide space for regeneration. Scattered group selection (regeneration gaps) may additionally be used. Residual BA is generally 60-90 sq ft/acre.
  OI CROSSOVER – use code **8** (selection).

- **Group selection** – trees are removed and new age classes are established in small groups. The width of groups is commonly approximately twice the height of the mature trees. These openings provide microenvironments suitable for regeneration of shade tolerant species. Residual BA is generally 50-90 sq ft/acre.
  OI CROSSOVER – use code **8** (selection).

INTERMEDIATE HARVESTS (done for reasons other than regeneration, in stands usually treated with even or two-aged systems):

Thinnings – cultural treatments done to reduce stand density primarily to improve growth, stand quality, value, or species composition; enhance forest health, or recover potential mortality.

- **Crown thinning** – removal of trees from dominant and codominant crown classes. Residual BA generally runs from 50-110 sq ft/acre.
  OI CROSSOVER – use code **4** (thinning).

- **Low thinning** – the removal of trees from the lower crown classes to favor those in the upper crown classes. Residual BA generally runs from 80-120 sq ft/acre.
  OI CROSSOVER – use code **4** (thinning).

- **Systematic thinning** – removal of trees in rows, strips, or by using fixed spacing intervals to control stand spacing and favor desired trees without regard to crown position. Not a regeneration harvest. Residual BA can vary, but it is generally no less than one half (more often 2/3) of the original BA.
  OI CROSSOVER – use code **4** (thinning).

When prescribing a cut, make sure the method of cut refers to the featured stand. For example, a commercial thinning or final harvest cannot be made in a seedling-sapling stand, but a removal could be. Cuts should be prescribed if managerially desirable even if the stand is inoperable or there is insufficient personnel to implement the prescription. The merchantability field and limiting factor codes will sort out the operable stands**. Refer to the land management flowchart in Appendix F for further guidance.**

If a commercial cut is prescribed for a stand, the following must be coded:

- Method of cut

- Merchantability
- Treatment period must be code 0 (within 0 to 9 years)
- Harvest cutting priority

If only a part of the total basal area is to be cut during a commercial cut, a partial cut record is coded with the species/product fields for the volume to be harvested.

Note: Salvage cuts should be coded by one of the above descriptions that is most pertinent. Be sure to note in comments that it is a salvage.

Merchantability/Availability (MER)

0. No cut prescribed.
1. Operable for cordwood products with current markets.
2. Operable for sawtimber with current markets.
3. Operable for integrated sale with current markets.
4. Operable volume for cordwood products, no market or labor. {Northern Hardwood stands needing thinning with 5 or more cords per acre to be removed, but with no market or labor, should be coded method of cut 4 and merchantability 4. If there are less than 5 cords per acre, prescribe no cut under MOC but a thinning (cult need 7) under cultural treatment}.
5. Operable volume for sawtimber, no market.
6. Operable volume for integrated sale-no market or market for one product which is not operable by itself.
7. Inoperable, inaccessible, or insufficient volume (For Northern Hardwoods this code will not be used for insufficient volume. No cut will be prescribed if volume per acre is less than 5 cords. Code 7 under cultural need will be assigned to affect treatment).

   The volume per acre and total volume available at which a stand becomes operable will vary from area to area and also by cover type or species.

Treatment Period Prediction (TMT P)

This is an estimate for the earliest treatment needed. It may be pruning, non-commercial thinning, harvest etc.

0. 0-9 years
1. 10-19 years
2. 20-29 years
3. 30-39 years
4. 40-49 years
5. 50-59 years
6. 60-69 years
7. 70-79 years
8. 80+ years
9. not scheduled or non-productive

Management and Reproduction Status (RS)

0. Stand not being regenerated and not in need of reforestation.

No Conversion Prescribed:

1. Natural regeneration expected. Reproduction of intended management objective (species) is adequate. (No deliberate regeneration needed).
2. Reproduction of intended management objective (species) is inadequate.

Conversion to Different Cover Type Prescribed:

3. Reproduction of new management objective (species) is adequate.
4. Reproduction of new management objective (species) is inadequate.

Management Objective Type (MO)

This is the cover species objective for the next 10 years. If there will be a different management objective after 10 years, then that objective should be indicated in the comments. Use cover type codes (letter) shown on page 8.

Cultural Need (CULT N)

NOTE for Codes (1), (3), and (4) – Use one of these codes if a regeneration cut was prescribed and the Management Objective will be achieved by one of these regeneration methods. In most cases, (see exception under code 0 above) one of these three codes must be used when a regeneration cut is prescribed.

0. None – Use this code if a regeneration cut was not prescribed and no non-commercial cultural need is prescribed.
    - Also use this code if a regeneration cut was prescribed, but the Management Objective is to not reforest the stand. An example of this would be where the stand is final harvested with the objective being to create a wildlife opening.
1. Planting
2. Opening maintenance
3. Direct seeding
4. Natural regeneration – Use this code where natural regeneration is expected. Note for the next field, "Cultural Method" may be coded "None" if no Method is needed to achieve this Need, or coded some other Method (like scalping or prescribed burning) if such method is necessary to achieve the Need.
5. Release
6. Cleaning and weeding
7. Thinning
8. Pruning
9. Other (specify in comments)

When more than one need exists, choose the major need. Indicate the other need(s) in the comments. If natural regeneration, planting or seeding is specified, the species selection will be identified by management objective cover type.

NOTE: If a cultural need is prescribed, then the following must be coded as a minimum:

- Treatment period must be coded 0 (within 0 to 9 years)
- Cultural need
- Cultural method
- Priority of cultural need
- If cultural treatment includes TSI, the TSI basal area must be coded

Cultural Method (CULT M)

0. None
1. Hand tools
2. Aerial application
3. Ground application

4. Bulldozer
5. Machine scalp or scarify
6. Mechanical, other
7. Prescribed burning
8. Other

Priority of Cultural Need (CULT P)

0. No treatment recommended
1. Priority one
2. Priority two
3. Priority three
4. Priority four

Considerations in defining priorities include: size of trees, site index, quality, acreage, accessibility, amount of basal area to be removed, other resource considerations.

Timber Stand Improvement (TSI) Basal Area (TSIBA)

This is a non-commercial treatment. In most cases this will apply to northern hardwoods only.

Enter BA rounded to the nearest 10. For example, 12 sq. ft. would be entered as 10, 36 sq. ft. would be entered as 40.

Harvest Cutting Priority (HCP)

As determined by Unit Manager and Habitat Biologist (always "0" unless cutting).

The following five criteria should be considered when setting priority:

- Risk
- Value
- Accessibility
- Cost
- Overall Management Operation

0. No cut prescribed this decade.

If a Method of Cut (MOC) is prescribed for the stand, consider it within the context of the management goals for the entire forest. Priorities need to be evaluated through consideration of risk and value as well as practical management constraints such as accessibility and benefit/cost considerations.

1. A “High” priority may be given after considering:

- Risk of loss to high value (either economically or biologically) species, cover types or communities, or
- The need to maintain or enhance the growth rate in the post treatment residual stand.
- The need to maintain or create valuable or unique habitat conditions.

2. A “Medium” priority should be given when the High criteria do not apply, but the cutting is important in carrying out the management goals of the forest.
3. A “Low” priority will be given for cuts deemed desirable, but of lesser importance for cutting than the Medium priorities when the five criteria are evaluated.

   Note: the High priority should be used when the risk of loss of a desirable forest condition is high. Medium and Low priorities will sort out the cutting order for the remainder of the prescribed stands, given the above criteria.
4. Not used.
5. Not used.
6. Stand currently under contract. To be used when a stand is still under contract during the compartment review/stand examination period.

Total Basal Area (TOTBA)

Nearest 10 sq. ft. of BA, (all trees 5.0" dbh and larger). If there is significant basal area in saplings (under 5.0" dbh) indicate in the comments. Calculated by OIPC. No input necessary.

Average DBH (AV DBH)

Code to the nearest whole inch. DBH should be for the featured stand.

Understory Type (UNDT)

Use cover type codes (letter) shown under cover type above. If no understory is present, code "X".

Understory Stocking (UNDSD)

Refers to the type identified in “Understory Type”. If other understory species should be noted, do so in comments.

0. <17% stocked
1. Poor – 18-39% stocked
2. Medium - 40-69% stocked
3. Well – 70%+ stocked

Erosion Hazard (EHAZ)

Clarification under comments may be necessary.

0. None
1. Low
2. Medium
3. High
4. Special Problems

Rate for the most hazardous part of the stand. If there is a steep bluff running the length or width of the stand consider an appropriate risk level.

Watershed Treatment (WTMT)

Clarification under comments may be necessary.

0. None
1. Gully stabilization
2. Sheet Erosion
3. Stabilization of dunes and blowouts
4. Stream bank-lakeshore stabilization
5. Channel clearing
6. Rehabilitation of non-maintained roads
7. Mining restoration
8. Sediment basin construction
9. Other (specify in comments)

Special Management Area Potential (SMAP)

Clarification under comments may be necessary.

0. None
1. Free flowing stream within stand
2. Beaver dam
3. Unusual scenic value
4. Unusual botanical
5. Historical
6. Unusual geological
7. Immediacy of development of adjacent area
8. Endangered and threatened species (specify in comments)

9. Other (specify in comments)

Special Wildlife Practices (WLDP)

0. None
1. Opening creation
2. Cover Plantings
3. Food plantings
4. Hunter walking trail
5. Fertilization
6. Mowing
7. Pot hole development
8. Other (specify in comments)

Special Wildlife Practices (WLDP)

Use code list above (this gives the opportunity to prescribe two practices).

Ground Cover (GC)

0. Sweet fern
1. Grass
2. Blueberry and/or Leatherleaf
3. Shrubs, low (0-2')
4. Shrubs, medium height (2' - 4')
5. Shrubs, high (>4')
6. Tree seedlings, same as overstory species (use only if present and no other ground cover exists).
7. Tree seedlings, other than overstory species (use only if present and no other ground cover exists).
8. Bracken fern
9. Other herbaceous

NOTE: When ground cover cannot be determined or one of the above categories does not apply, leave the column blank.

Soil Type (SOIL T)

Note – the soil numbering scheme and series below are outdated. They will not be updated at this time, since IFMAP will be using soils as a layer to access and will not use these codes. In the interim, use the closest code and explain in the comments or code for the texture/drainage class (ie., well-drained loamy sands would be 200) if the older info is not available.

Use the standard soils and soil associations (Appendix B). When working with an association, the soil listed first is considered to be the dominant soil. For example, if your map shows a Rubicon-Ocqueoc-Ingalls Association, the Rubicon soil was found to be of greatest extent with inclusions of Ocqueoc and Ingalls that could not be separated on the map. In this example, if the specific soil type cannot be identified for the stand and if there was no code for the association, the soil should be coded as Rubicon.

Also in this case, if you can separate on a stand basis the well drained and the poorly drained sands, the well drained would be coded 120 for Rubicon and the poorly drained sands would be coded 770 for Ingalls.

The 3 digit number stands for texture and drainage:

Code Numbers	Texture/Drainage
00-99	Organic soils
100-199	Well-drained sands
200-299	Well-drained loamy sands
300-399	Well-drained sand loams
400-499	Well-drained loams
500-599	Well-drained clay loams
600-699	Somewhat poorly drained soils finer textured
700-799	Somewhat poorly drained sands
800-899	Poorly drained soils - all textures
900-999	Bedrock soils – well drained to poorly drained

Insects, Disease, Other Problems (I-D)

Use the code that best describes stand health. Use comments to specify the pest if it is known. Rate for the worst condition on 10 acres or more of the stand.

0. Healthy - no problems
1. Deformed trees - describe deformity and note degree (acres and/or percent of trees deformed)
2. Pockets of stunted, dead or missing trees - note degree and describe (e.g., 30% stunted, 4 acres missing, 20% of 10 acres dead)
3. Dead or flagged branches, needles, or tips - note specific symptoms and degree (e.g., 20% of tips flagged, dead branches on 75% of trees)
4. Defoliation - note species and degree (e.g., 75% of sugar maple, 50% defoliated, or 1/2 new growth on all jack pine)
5. Stem Cankers - note species, height frequency and degree (e.g., 1 or 2 at 3-5' height on aspen on west 10 acres of stand)
6. Conks - describe and note degree and species (3 gray conks/tree on 20 trees/acre in W 1/2 of stand)
7. Weather Related - describe and note degree species (e.g., ice broken tops in 1/2 of trees on 15 acres in NW corner)
8. Other Animal Pests - describe and note degree and species (e.g., porcupine killed tops in some red pine along north edge 10 acres). Heavily browsed stands need to be coded here.

9. Unknown - describe and indicate if further investigation is necessary (e.g., dead needles on terminals of most pine 3-5' tall. Check)

Site Index Species (SITE SPEC)

Standard species codes (numeric). Do not use mixed species codes. The only exception is that Code "70" may be used for northern pin or black oak. Use code for actual tree measured. Should match featured stand or management objective species.

Stand Year of Origin (YR ORIG)

If the stand is even-aged or has two or three distinct layers (super-canopy, canopy, sub-canopy), measure the year of origin from the canopy layer of the stand. Measure the age of one or more codominant trees in the species most prevalent in the canopy. Code the four digits of the year of origin of the featured stand.

Uneven-aged stands – to consider a stand uneven-aged, the stand should consist of multiple (3+) age classes, but distinct classes or layers cannot be discerned. All layers are present, but none of them are distinct or predominate. Code the age as "555".

Year of origin is not needed for non-timbered stands.

Site Index (SI)

Site index is a very important data item. Measure and average at least two or three dominant or codominant main stand trees. These trees should be from different parts of the stand. Choose SI trees wisely. Be aware of possible past suppression and/or damage.

For examinations during succeeding decades, new SI should be taken to verify previous data. SI's are very important indications of site quality. They need to be as accurate as possible. Many decisions in planning and investment are determined using SI. Be aware of stand histories in which entire stands may have been suppressed.

Site index curves are in Appendix C.

Meets Silvicultural Criteria (Y or N)

Whenever a stand is saved and an edit check is run, OIPC will update the **"Meets Silvicultural Criteria"** code. Cover type as well as age and/or basal area are used to determine whether or not the stand meets generic "silvicultural criteria" for harvest or other treatment. See Appendix G for silvicultural criteria by cover type.

This code is not to be used as a prescription tool, but rather to determine whether or not **treatment limiting factors** are required. Note that these criteria are not statewide guidelines for final stand decision-making. (See flowchart in Appendix F)

Note that treatments may be prescribed, either commercial or non-commercial, in stands which are generally considered not meeting silvicultural criteria. For example, treatments of young jack pine for Kirtland's warbler habitat could be prescribed in immature stands. Such prescriptions are not affected by this field. Such treatments are

considered "managerially desirable". Even though the **"Meets Silvicultural Criteria"** may be **"N"**, treatments can still be coded.

Treatment Limiting Factors

Factors to be used to show availability of the stand for harvest. Often, restraints exist that will restrict harvest. These are not to be used as stand descriptors, but are the reasons that stands that appear silviculturally ready for harvest are not being cut. They can be used for any stand, but **any stand that meets silvicultural criteria and does not have a method of cut coded must have at least one treatment limiting factor coded**.
For more information on how to code these factors, see the flowchart in Appendix F.

1. Administrative and Legal Factors

Management is modified or restricted to accommodate laws, procedures or practices of divisions or agencies, or the desires and interests of particular forest users, neighboring landowners, and environmental, political, or commercial interest groups.

A. Federal law or policy – the actual federal law or policy is to be identified in the stand comments. The most common example is land owned by the US Fish and Wildlife Service that is inventoried by the DNR.
B. State law or policy – the actual state law or policy is to be identified in the stand comments. The most common example is the Natural Rivers Act.
C. Local law or policy – the actual law or policy is to be identified in the stand comments.
D. Other Agency concerns – name the other agency and their concerns in the comments. This is for agencies other than the DNR.
E. Cedar or Hemlock cutting restraints – a policy decision has been made (usually by Wildlife Division in conjunction with FMFMD) that cedar or hemlock is not to b e harvested in this situation. Be sure that it is an actual policy decision that the stand is not to be treated, not that it will be left because of the lack of regeneration technology or stand conditions such as "too wet".
F. Other Dept./Div. Procedures or practices – describe in comments. This is for Departments outside of the DNR or Divisions outside of FMFMD. Keep in mind that Wildlife Division is a co-manager, so that most decisions between FMFMD and WD should fall under other categories explaining the actual limitation.
G. Neighbor – the decision is based on input from a neighbor of the stand in question. This is not necessarily an adjacent neighbor to the stand, but from the compartment vicinity.
H. Interest group – decision is based on input from an environmental, political, commercial, or other interest group. Describe in comments.

2. Accessibility Factors

Management is constrained by outside forces due to physical barriers that limit or prevent access to the property on which the operation is to be accomplished.

A. Adjacent landowner(s) denies access

B. Bridge needed (portable bridge not available or inadequate)

C. Existing bridge out or unsafe

D. Road needed – a road could be built to access the stand, but resources are presently not available; either the distance is too great to make road building economical or budgets are not adequate.

E. Too Steep – the stand is too steep to be operable for treatment.

F. Too Wet – the stand is too wet to harvest without unacceptable damage to the soil, water table, or residual trees.

G. Blocked by other physical obstacle – access to the stand is blocked. Some examples of blocked access include rivers (bridge not desired), travel through wetlands, and access limited by topography.

H. Land survey needed – treatment cannot be done unless a survey is completed and it is unlikely that the survey will happen due to lack of surveyor time or budget constraints.

3. Special Management or Use Designations

Management is limited or prevented by specific use designations/considerations

A. Potential or designated old growth

B. Threatened, Endangered, or Special Concern species/communities – identify species of concern in comments or locked comments.

C. Quiet area/natural area/wilderness – stand has been officially designated as one of these.

D. Recreational site – campground or access site. Trails and other recreational facilities may at times also constrain treatment. Identify the recreational site in the stand comments.

E. Scenic values/visual values – roadsides, overlooks, waterfronts and other special scenic or visual values. In these cases, the visual value is such that treatment should not occur. Clarify in comments.

F. Easement/lease/long-term agreement (non-military) – this would include examples such as:

- Undivided interests (identify in comments)
- Lands within Luce County that are owned by the DNR and managed by Luce County under long term agreement
- Lands previously owned by utility companies that have either reserved timber rights or active cabin leases.

G. Military use/easement/lease/long-term agreement

H. Influence zones – operations inventory influence zone is not general forest and treatment is constrained by that designation. Examples include travel influence and water influence. Other factors may be used to better explain the constraints.

I. Deer yards – stand is part of a deer yard and deer management decisions constrain management of the stand.

J. Historical and archeological sites – identify in locked comments.

K. Water quality / BMPs (best management practices) – treatment is constrained by concerns over the impact of treatment on the quality of nearby watercourses.

L. Rare or unique landforms – identify in regular or locked comments.

M. Other special wildlife habitat consideration – describe in comments.

4. Markets and Industrial Factors

Management is constrained due to lack of markets, lack of market capacity, insufficient volume, or inoperable stands.

A. No market for species/product – long term outlook for this species/product (over the decade) shows no or very limited market for this material.

B. Inferior quality – quality of the species/product is so inferior that it is not commercially operable.

C. Inadequate volume due to low stocking/small diameter/etc.

D. Inadequate volume due to small acreage

E. Timber contractors not available

5. Technological/Ecological Factors

Management is constrained or limited due to a lack of technical knowledge and techniques. Also includes stands in which harvesting is delayed awaiting satisfactory reproduction or to attain age/size class diversity.

A. Harvesting technology inadequate

B. Regeneration technology inadequate

C. Utilization technology inadequate

D. Retention of stand for regeneration purposes (e.g. shelterwood)

E. Delayed treatment for age/size class diversity

F. Delayed to take advantage of site quality or growth

FMD Comments.

Use full and complete comments to describe the stand and conditions that exist. Comments may also be used to describe the data collected. Remember that others who use this data may not be able to get into the field and see the stand, so complete information here is helpful. Also remember to keep all comments professional.

WLD Comments.

Same as above.

Locked Comments.

Should be used for information that requires confidentiality in order to provide for protection of the resource.

Total Volume/Partial Cut Volume

Total volume represents the species/product breakdown of the entire stand. Partial Cut volume represents the subset of the total volume that is prescribed to be removed.

Species

Use standard numeric species codes. Use as many as necessary to represent the entire stand. Mixed species codes should be avoided unless species are so mixed that individual species cannot be broken out, or species group represents 10 square feet or less.

Product

1. Sawtimber trees – any tree with at least one merchantable sawtimber stick (see definition below).
2. Cordwood trees – any tree with no sawtimber sticks (see definition below) and at least one merchantable cordwood stick.

Sticks

Equals average number of merchantable 8' sticks for each respective species/product group. For sawtimber trees, count sawtimber sticks only.

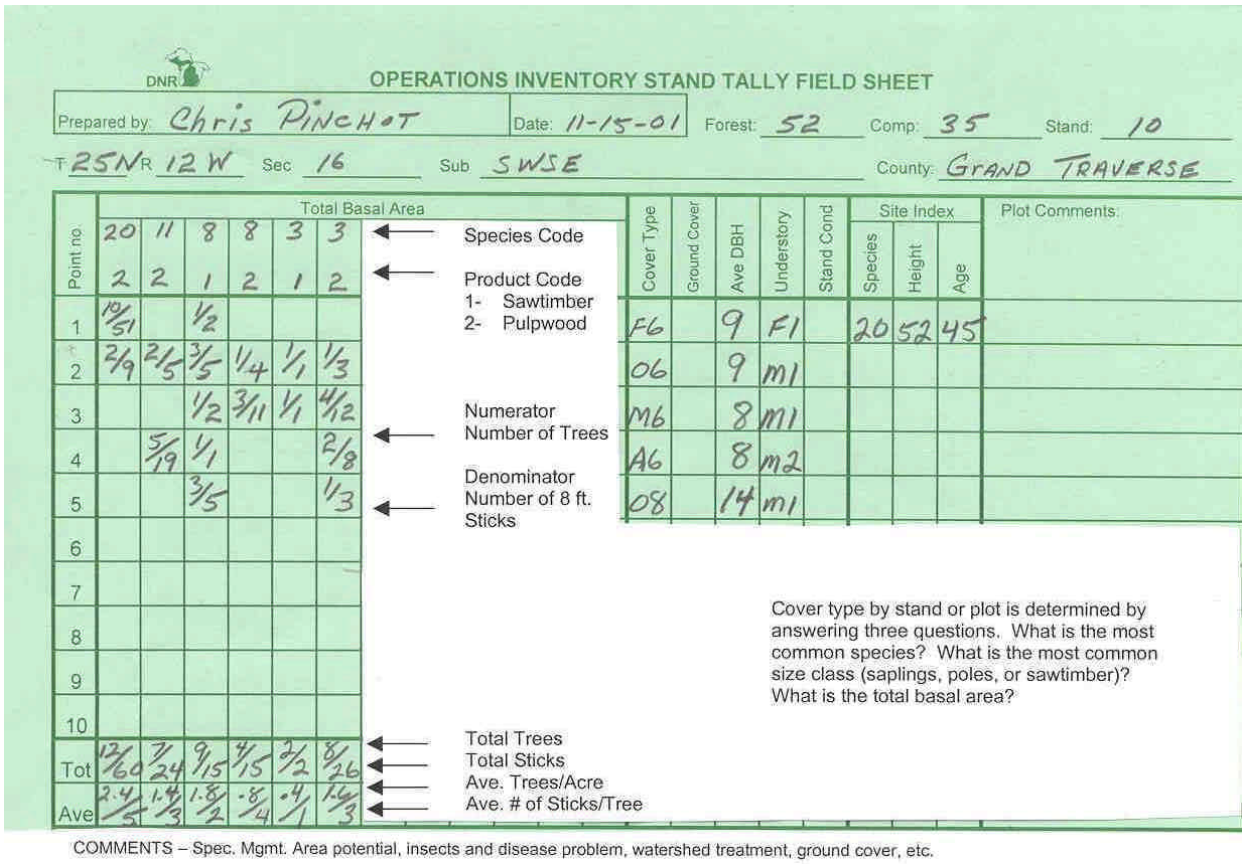
Average Basal Area/Acre

Code for each species/product group to the nearest 10 square feet.

Code only merchantable stems. Do not code culls or saplings.

If the trees are sawlog size, but not of sawlog quality, code as cordwood. This may cause "questionable entry" error message in poor condition "sawlog" stands. These questionable entries will need to be "okayed".

Coding Illustration 1



OPERATIONS INVENTORY STAND TALLY FIELD SHEET

Prepared by: Chris PINCHOT | Date: 11-15-01 | Forest: 52 | Comp: 35 | Stand: 10

T 25N R 12W | Sec 16 | Sub SWSE | County: GRAND TRAVERSE

Point no.	Total Basal Area						Cover Type	Ground Cover	Ave DBH	Understory	Stand Cond	Site Index: Species	Site Index: Height	Site Index: Age	Plot Comments
	20 / 2	11 / 2	8 / 1	8 / 2	3 / 1	3 / 2									
1	10/51		1/2				F6		9	F1		20	52	45	
2	2/9	2/5	3/5	1/4	1/1	1/3	06		9	M1					
3			1/2	3/11	1/1	4/12	M6		8	M1					
4		5/19	1/1			2/8	A6		8	M2					
5			3/5			1/3	08		14	M1					
6															
7															
8															
9															
10															
Tot	12/60	7/24	9/15	4/15	2/2	8/26									
Ave	2.4/5	1.4/3	1.8/2	.8/4	.4/1	1.6/3									

Species Code

Product Code
1- Sawtimber
2- Pulpwood

Numerator
Number of Trees

Denominator
Number of 8 ft. Sticks

Total Trees
Total Sticks
Ave. Trees/Acre
Ave. # of Sticks/Tree

Cover type by stand or plot is determined by answering three questions. What is the most common species? What is the most common size class (saplings, poles, or sawtimber)? What is the total basal area?

COMMENTS – Spec. Mgmt. Area potential, insects and disease problem, watershed treatment, ground cover, etc.

This example illustrates how to use form R4153 for:

1. Computing Basal Area

   Total the number of trees by species for the plots. Divide these totals by the total number of plots taken. Multiply by 10 (BAF 10) to get average basal area by species for the stand. You need the breakdown by species to fill out the species product fields. Species of little basal area (0.4, 0.2, 0.1, 0.6) can be combined into a hardwoods group or softwoods group. Or they can be rounded into data of more abundant species or products, or rounded out. Enter BA in the Total Volume table rounded to the nearest ten. (e.g. 24 sq. ft. (2.4 trees per acre) is rounded to "20"; 18 sq. ft. (1.8 trees per acre) is also rounded to "20".

2. Computing Average Number of Sticks Per Tree

   Total the number of 8-foot sticks by species for the plot. Divide each total by the corresponding total number of trees by species. This gives the average number of 8-foot sticks per tree. Round to the nearest stick.

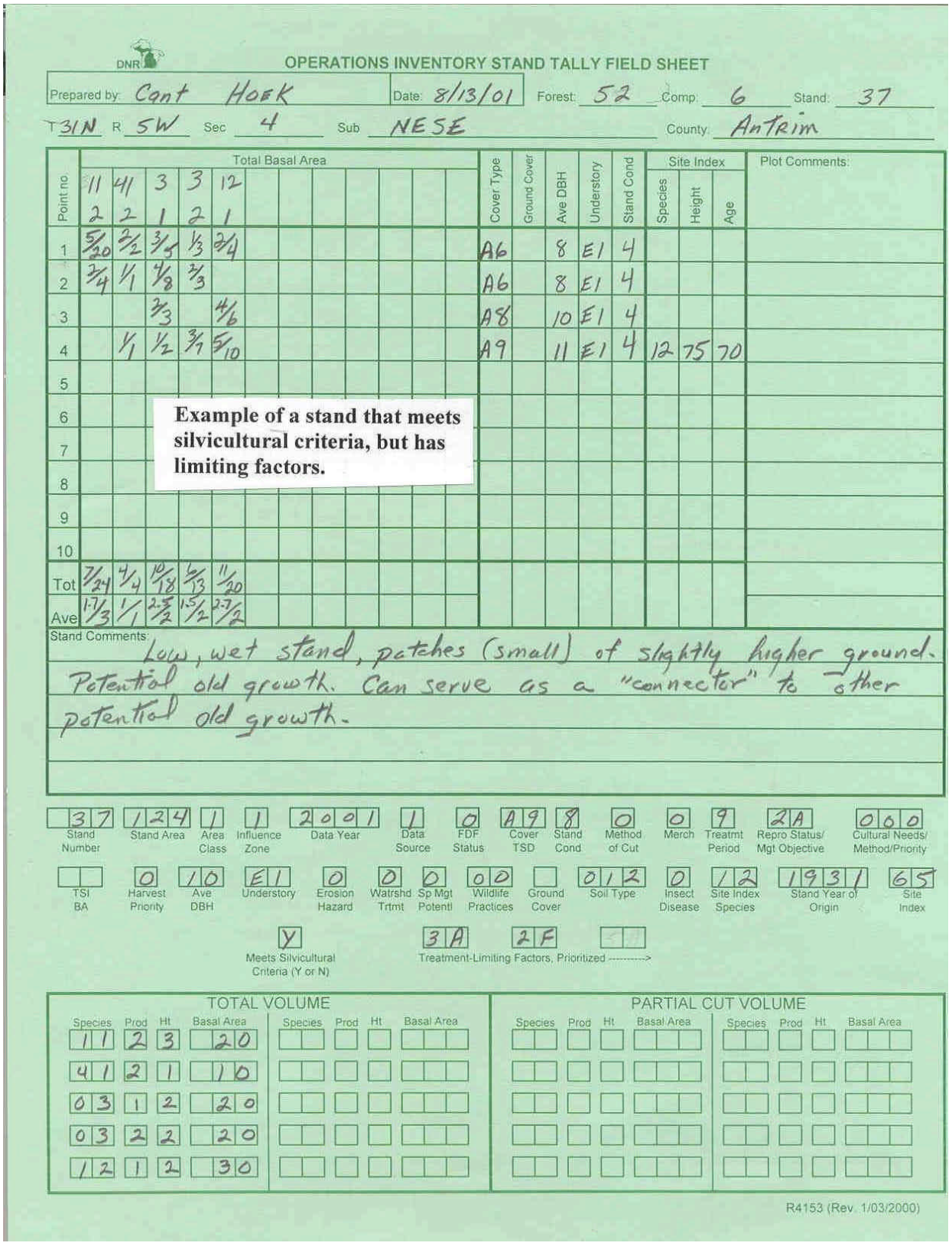
   In this example the species/product fields would be coded out as follows:

Species	Product	# Sticks	BA
08	1	2	**20**
08	2	4	**10**
20	2	5	**20**
11	2	3	**10**
*03	2	3	**20**

*Here the stand examiner dropped the 4 sq. ft. of red maple (code 03) saw logs since it did not round up to 10.

The species with the highest basal area (30 in the example) becomes the featured species (in this case oak). The most common size class is poles. The total basal area for all species (80 square feet) provides the stocking density. The type and stocking in this example is O6, which is then recorded in OIPC in the TS/D fields.

Coding Illustration 2



DNR

OPERATIONS INVENTORY STAND TALLY FIELD SHEET

Prepared by: Cont Hoek | Date: 8/13/01 | Forest: 52 | Comp: 6 | Stand: 37

T 31N R 5W Sec 4 Sub NESE County: Antrim

Point no	Total Basal Area												Cover Type	Ground Cover	Ave DBH	Understory	Stand Cond	Site Index: Species	Site Index: Height	Site Index: Age	Plot Comments:
	11 / 2	41 / 2	3 / 1	3 / 2	12 / 1																
1	5/20	2/2	3/5	1/3	2/4								A6		8	E1	4				
2	2/4	1/1	4/8	2/3									A6		8	E1	4				
3			3/3		4/6								A8		10	E1	4				
4		1/1	1/2	3/7	5/10								A9		11	E1	4	12	75	70	
5																					
6																					
7																					
8																					
9																					
10																					
Tot	7/24	4/4	10/18	6/13	11/20																
Ave	1.7/3	1/1	2.5/2	1.5/2	2.7/2																

Example of a stand that meets silvicultural criteria, but has limiting factors.

Stand Comments:
Low, wet stand, patches (small) of slightly higher ground. Potential old growth. Can serve as a "connector" to other potential old growth.

Stand Number	Stand Area	Area Class	Influence Zone	Data Year	Data Source	FDF Status	Cover TSD	Stand Cond	Method of Cut	Merch	Treatmt Period	Repro Status/ Mgt Objective	Cultural Needs/ Method/Priority
37	124	1	1	2001	1	0	A9	8	0	0	9	2A	000

TSI BA	Harvest Priority	Ave DBH	Understory	Erosion Hazard	Watrshd Trtmt	Sp Mgt Potentl	Wildlife Practices	Ground Cover	Soil Type	Insect Disease	Site Index Species	Stand Year of Origin	Site Index
	0	10	E1	0	0	0	00		012	0	12	1931	65

Meets Silvicultural Criteria (Y or N): Y

Treatment-Limiting Factors, Prioritized ---------->: 3A, 2F

TOTAL VOLUME

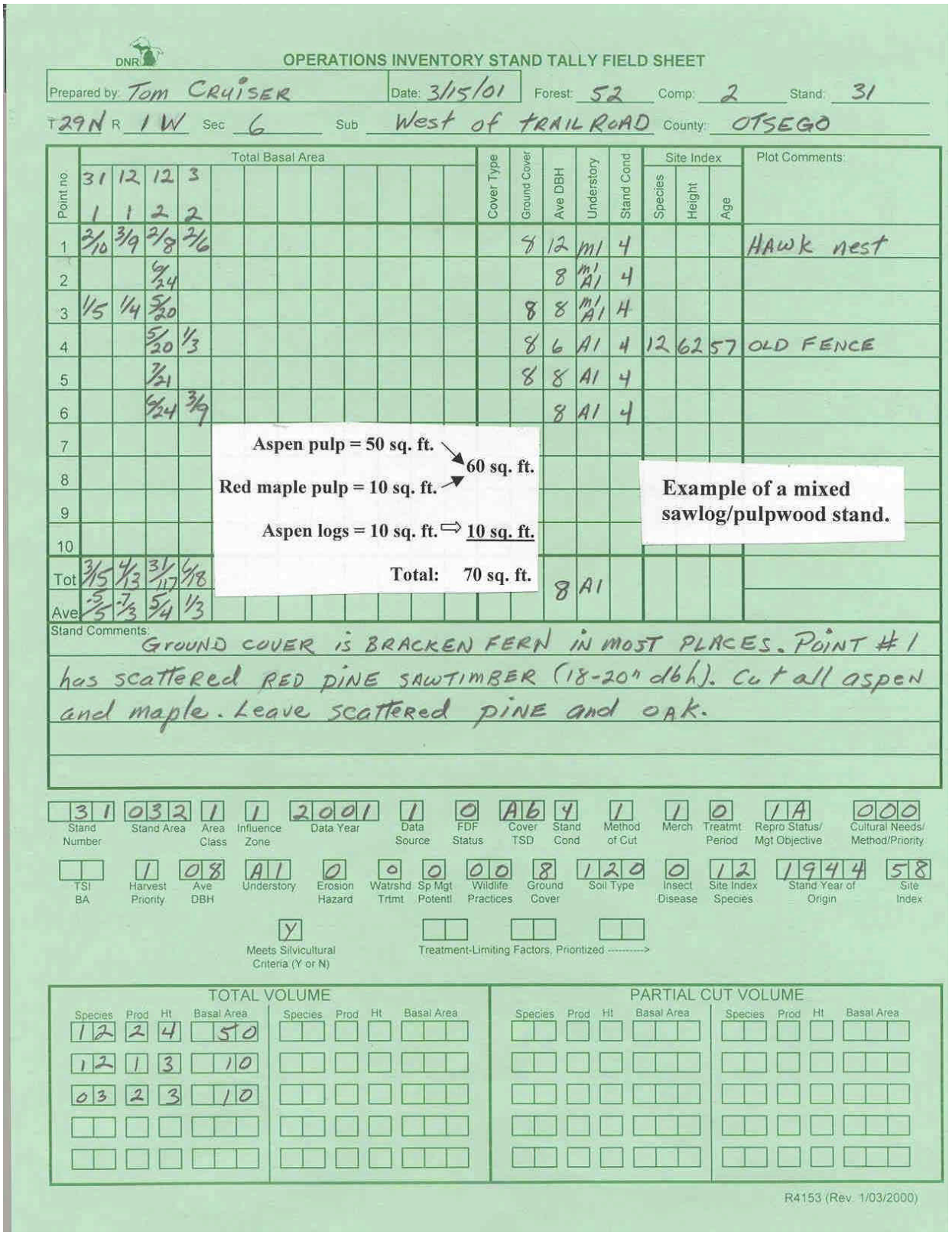
Species	Prod	Ht	Basal Area	Species	Prod	Ht	Basal Area
11	2	3	20				
41	2	1	10				
03	1	2	20				
03	2	2	20				
12	1	2	30				

PARTIAL CUT VOLUME

Species	Prod	Ht	Basal Area	Species	Prod	Ht	Basal Area

R4153 (Rev. 1/03/2000)

Coding Illustration 3



DNR

OPERATIONS INVENTORY STAND TALLY FIELD SHEET

Prepared by: Tom CRUISER | Date: 3/15/01 | Forest: 52 | Comp: 2 | Stand: 31

T 29N R 1W | Sec 6 | Sub West of TRAIL ROAD | County: OTSEGO

Point no	Total Basal Area										Cover Type	Ground Cover	Ave DBH	Understory	Stand Cond	Site Index: Species	Site Index: Height	Site Index: Age	Plot Comments:
	31	12	12	3															
	1	1	2	2															
1	2/10	3/9	2/8	2/6								4	12	M1	4				HAWK nest
2			4/24										8	M1/A1	4				
3	1/5	1/4	5/20									8	8	M1/A1	4				
4			5/20	1/3								8	6	A1	4	12	62	57	OLD FENCE
5			3/21									8	8	A1	4				
6			4/24	3/9									8	A1	4				
7																			
8																			
9																			
10																			
Tot	3/15	4/13	31/117	4/18															
Ave	3/5	4/3	5/4	1/3									8	A1					

Aspen pulp = 50 sq. ft. → 60 sq. ft.

Red maple pulp = 10 sq. ft. →

Aspen logs = 10 sq. ft. ⇨ 10 sq. ft.

Total: 70 sq. ft.

Example of a mixed sawlog/pulpwood stand.

Stand Comments: GROUND COVER IS BRACKEN FERN IN MOST PLACES. POINT #1 has scattered RED PINE SAWTIMBER (18-20" dbh). Cut all aspen and maple. Leave scattered PINE and OAK.

Stand Number	Stand Area	Area Class	Influence Zone	Data Year	Data Source	FDF Status	Cover TSD	Stand Cond	Method of Cut	Merch	Treatmt Period	Repro Status/ Mgt Objective	Cultural Needs/ Method/Priority
31	032	1	1	2001	1	0	A6	4	1	1	0	1A	000

TSI BA	Harvest Priority	Ave DBH	Understory	Erosion Hazard	Watrshd Trtmt	Sp Mgt Potentl	Wildlife Practices	Ground Cover	Soil Type	Insect Disease	Site Index Species	Stand Year of Origin	Site Index
	1	08	A1	0	0	0	00	8	120	0	12	1944	58

Meets Silvicultural Criteria (Y or N): Y

Treatment-Limiting Factors, Priontized ---------->

TOTAL VOLUME

Species	Prod	Ht	Basal Area
12	2	4	50
12	1	3	10
03	2	3	10

Species	Prod	Ht	Basal Area

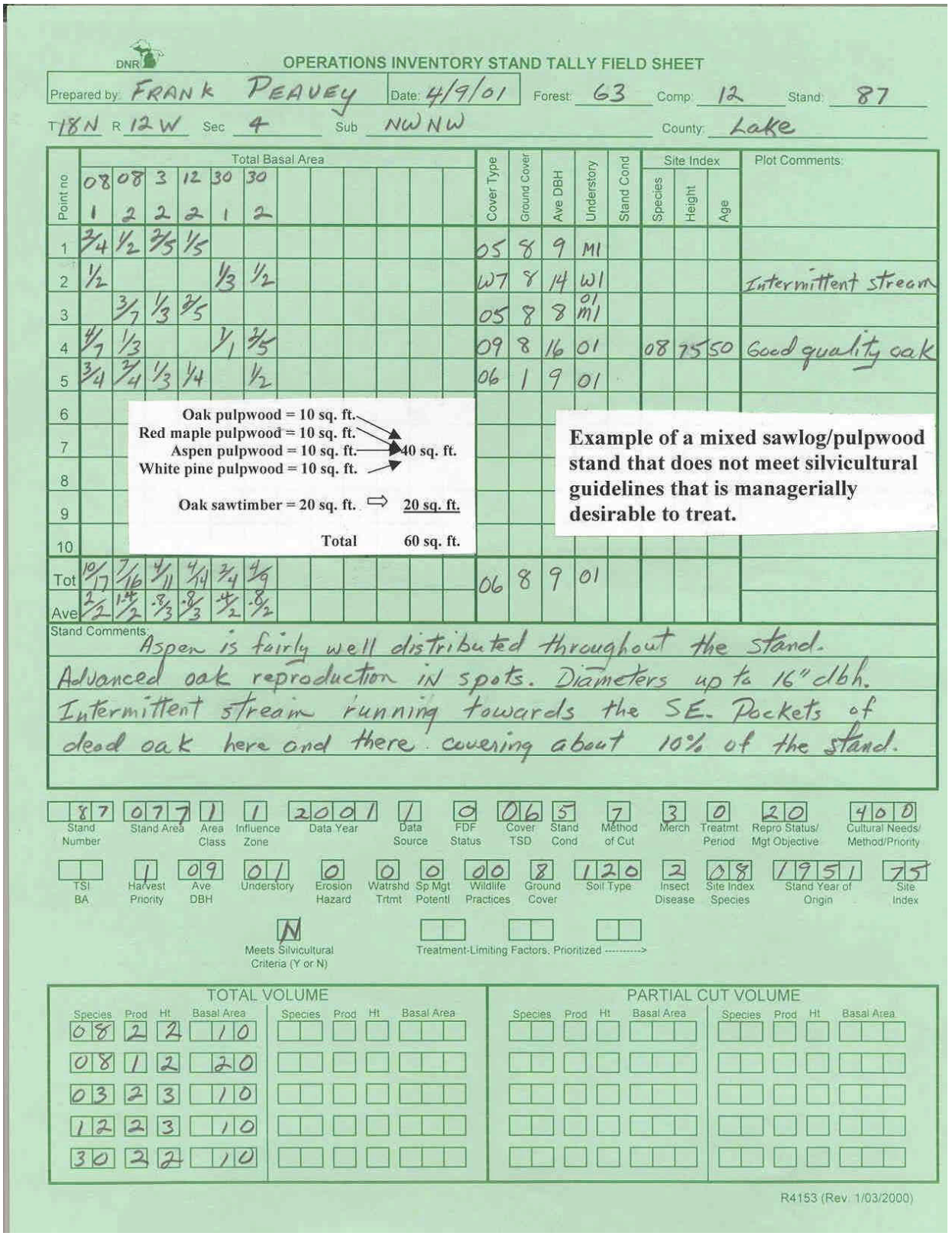
PARTIAL CUT VOLUME

Species	Prod	Ht	Basal Area

Species	Prod	Ht	Basal Area

R4153 (Rev. 1/03/2000)

Coding Illustration 4



DNR

OPERATIONS INVENTORY STAND TALLY FIELD SHEET

Prepared by: FRANK PEAVEY Date: 4/9/01 Forest: 63 Comp: 12 Stand: 87

T 18 N R 12 W Sec 4 Sub NW NW County: Lake

Point no	Total Basal Area: 08 1	08 2	3 2	12 2	30 1	30 2	Cover Type	Ground Cover	Ave DBH	Understory	Stand Cond	Site Index: Species	Height	Age	Plot Comments
1	3/4	1/2	2/5	1/5			05	8	9	M1					
2	1/2				1/3	1/2	W7	8	14	W1					Intermittent stream
3		3/7	1/3	2/5			05	8	8	01 M1					
4	4/7	1/3			1/1	2/5	09	8	16	01		08	75	50	Good quality oak
5	3/4	2/4	1/3	1/4		1/2	06	1	9	01					
6															
7															
8															
9															
10															
Tot	10/17	7/16	4/11	4/14	2/4	4/9	06	8	9	01					
Ave	2/2	1.5/2	.8/3	.8/3	.5/2	.8/2									

Oak pulpwood = 10 sq. ft.
Red maple pulpwood = 10 sq. ft.
Aspen pulpwood = 10 sq. ft. → 40 sq. ft.
White pine pulpwood = 10 sq. ft.

Oak sawtimber = 20 sq. ft. ⇨ 20 sq. ft.

Total 60 sq. ft.

Example of a mixed sawlog/pulpwood stand that does not meet silvicultural guidelines that is managerially desirable to treat.

Stand Comments: Aspen is fairly well distributed throughout the stand. Advanced oak reproduction in spots. Diameters up to 16" dbh. Intermittent stream running towards the SE. Pockets of dead oak here and there covering about 10% of the stand.

Stand Number	Stand Area	Area Class	Influence Zone	Data Year	Data Source	FDF Status	Cover TSD	Stand Cond	Method of Cut	Merch	Treatmt Period	Repro Status/ Mgt Objective	Cultural Needs/ Method/Priority
87	077	1	1	2001	1	0	06	5	7	3	0	20	400

TSI BA	Harvest Priority	Ave DBH	Understory	Erosion Hazard	Watrshd Trtmt	Sp Mgt Potentl	Wildlife Practices	Ground Cover	Soil Type	Insect Disease	Site Index Species	Stand Year of Origin	Site Index
	1	09	01	0	0	0	00	8	120	2	08	1951	75

Meets Silvicultural Criteria (Y or N): N

Treatment-Limiting Factors, Prioritized ---------->

TOTAL VOLUME

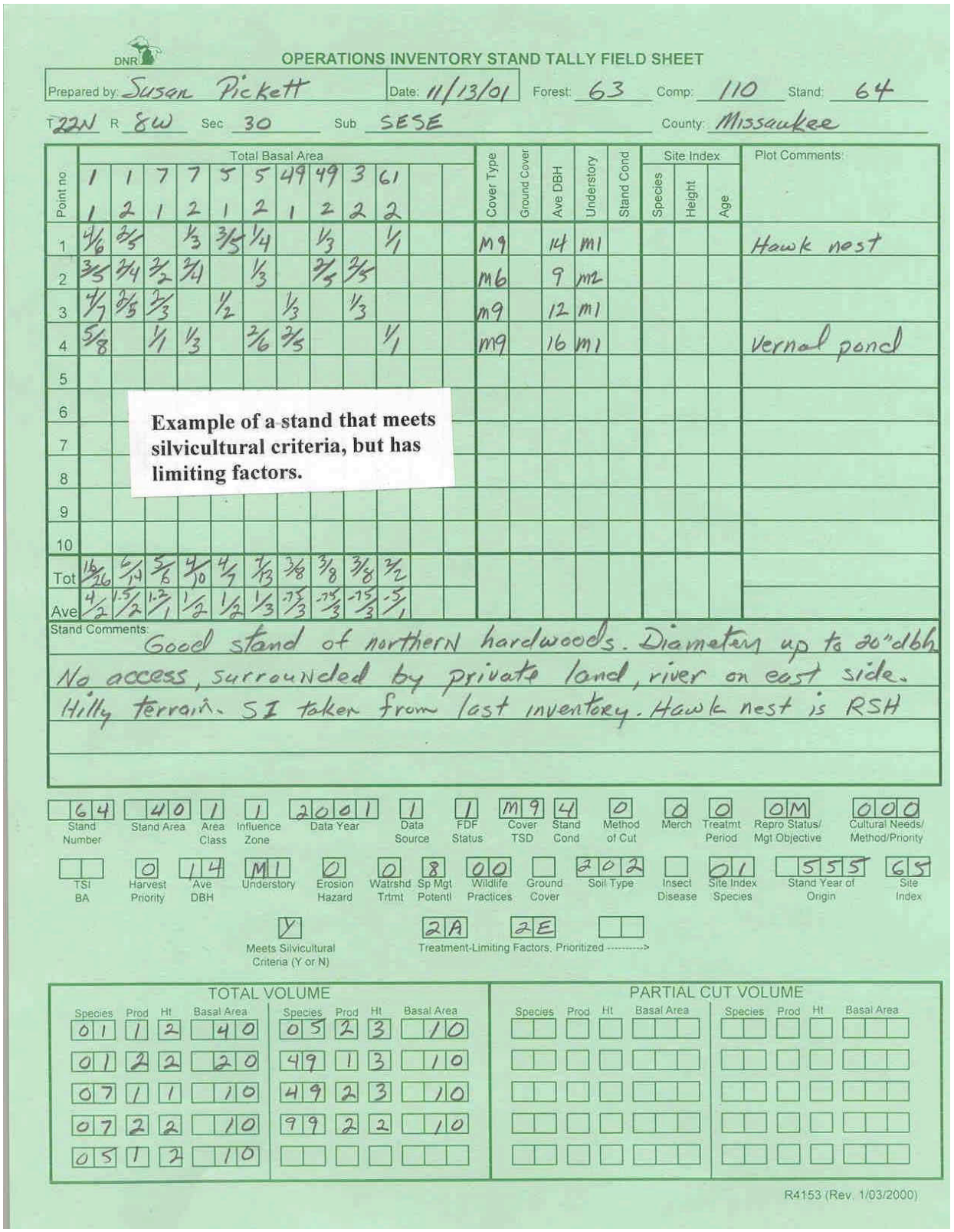
Species	Prod	Ht	Basal Area	Species	Prod	Ht	Basal Area
08	2	2	10				
08	1	2	20				
03	2	3	10				
12	2	3	10				
30	2	2	10				

PARTIAL CUT VOLUME

Species	Prod	Ht	Basal Area	Species	Prod	Ht	Basal Area

R4153 (Rev. 1/03/2000)

Coding Illustration 5



DNR

OPERATIONS INVENTORY STAND TALLY FIELD SHEET

Prepared by: Susan Pickett | Date: 11/13/01 | Forest: 63 | Comp: 110 | Stand: 64

T 22N R 8W | Sec 30 | Sub SESE | County: Missaukee

Point no	Total Basal Area	Cover Type	Ground Cover	Ave DBH	Understory	Stand Cond	Site Index: Species	Site Index: Height	Site Index: Age	Plot Comments:
	1 1 / 1 2 | 7 7 / 1 2 | 5 5 / 1 2 | 49 49 / 1 2 | 3 61 / 2 2									
1	4/6 3/5 | 1/3 3/5 | 1/4 1/3 | 1/1	M9		14	M1					Hawk nest
2	3/5 3/4 | 3/2 3/1 | 1/3 2/5 | 3/5	M6		9	M2					
3	4/7 3/5 | 3/3 1/2 | 1/3 1/3	M9		12	M1					
4	5/8 1/1 | 1/3 2/6 | 2/5 1/1	M9		16	M1					Vernal pond
5										
6										
7										
8										
9										
10										
Tot	16/26 6/14 | 5/6 4/10 | 4/7 7/13 | 3/8 3/8 | 3/8 3/2									
Ave	4/2 1.5/2 | 1.2/1 1/2 | 1/2 1/3 | .75/3 .75/3 | .75/3 .5/1									

Example of a stand that meets silvicultural criteria, but has limiting factors.

Stand Comments: Good stand of northern hardwoods. Diameters up to 20" dbh. No access, surrounded by private land, river on east side. Hilly terrain. SI taken from last inventory. Hawk nest is RSH

Stand Number	Stand Area	Area Class	Influence Zone	Data Year	Data Source	FDF Status	Cover TSD	Stand Cond	Method of Cut	Merch	Treatmt Period	Repro Status/ Mgt Objective	Cultural Needs/ Method/Priority
64	40	1	1	2001	1	1	M9	4	0	0	0	0M	000

TSI BA	Harvest Priority	Ave DBH	Understory	Erosion Hazard	Watrshd Trtmt	Sp Mgt Potentl	Wildlife Practices	Ground Cover	Soil Type	Insect Disease	Site Index Species	Stand Year of Origin	Site Index
	0	14	M1	0	0	8	00		202		01	1555	65

Meets Silvicultural Criteria (Y or N): Y

Treatment-Limiting Factors, Prioritized ---------->: 2A 2E

TOTAL VOLUME

Species	Prod	Ht	Basal Area
01	1	2	40
01	2	2	20
07	1	1	10
07	2	2	10
05	1	2	10

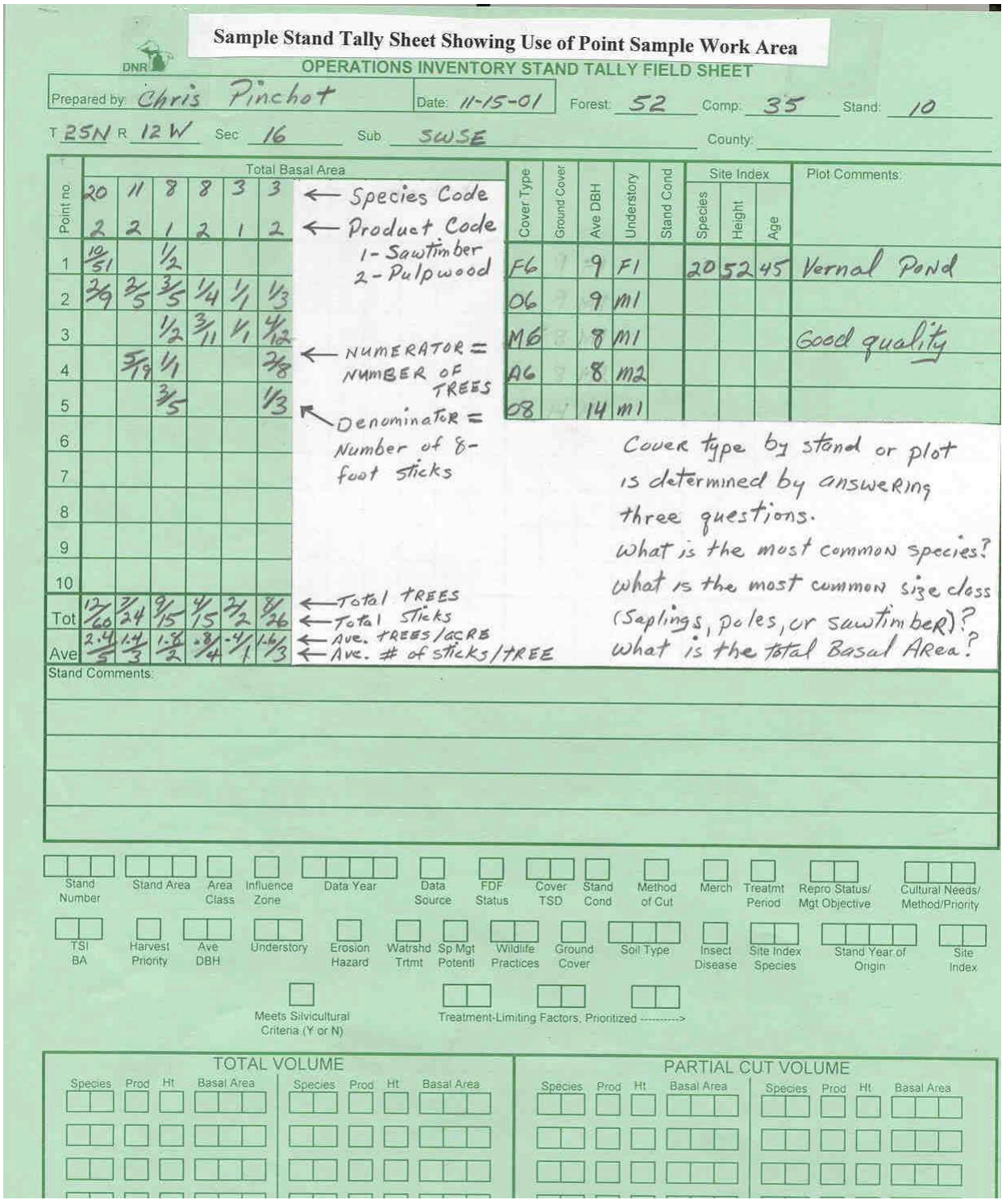
Species	Prod	Ht	Basal Area
05	2	3	10
49	1	3	10
49	2	3	10
99	2	2	10

PARTIAL CUT VOLUME

Species	Prod	Ht	Basal Area

Species	Prod	Ht	Basal Area

R4153 (Rev. 1/03/2000)



Sample Stand Tally Sheet Showing Use of Point Sample Work Area

DNR

OPERATIONS INVENTORY STAND TALLY FIELD SHEET

Prepared by: Chris Pinchot | Date: 11-15-01 | Forest: 52 | Comp: 35 | Stand: 10

T 25N R 12W | Sec 16 | Sub SWSE | County:

Point no	Total Basal Area					
	20	11	8	8	3	3
	2	2	1	2	1	2
1	10/51		1/2			
2	2/9	2/5	3/5	1/4	1/1	1/3
3			1/2	3/11	1/1	4/12
4		5/19	1/1			2/8
5			3/5			1/3
6						
7						
8						
9						
10						
Tot	12/60	7/24	9/15	4/15	2/2	8/26
Ave	2.4/5	1.4/3	1.8/2	.8/4	.4/1	1.6/3

← Species Code
← Product Code
1 - Sawtimber
2 - Pulpwood

← NUMERATOR = NUMBER OF TREES
← Denominator = Number of 8-foot sticks

← Total TREES
← Total Sticks
← Ave. TREES/ACRE
← Ave. # of sticks/TREE

Point no	Cover Type	Ground Cover	Ave DBH	Understory	Stand Cond	Site Index: Species	Site Index: Height	Site Index: Age	Plot Comments
1	F6		9	F1		20	52	45	Vernal Pond
2	06		9	M1					
3	M6		8	M1					Good quality
4	A6		8	M2					
5	08		14	M1					

Cover type by stand or plot is determined by answering three questions.
What is the most common species?
What is the most common size class (Saplings, poles, or sawtimber)?
What is the Total Basal Area?

Stand Comments:

Stand Number | Stand Area | Area Class | Influence Zone | Data Year | Data Source | FDF Status | Cover TSD | Stand Cond | Method of Cut | Merch | Treatmt Period | Repro Status/ Mgt Objective | Cultural Needs/ Method/Priority

TSI BA | Harvest Priority | Ave DBH | Understory | Erosion Hazard | Watrshd Trtmt | Sp Mgt Potenti | Wildlife Practices | Ground Cover | Soil Type | Insect Disease | Site Index Species | Stand Year of Origin | Site Index

Meets Silvicultural Criteria (Y or N) | Treatment-Limiting Factors, Prioritized ---------->

TOTAL VOLUME

Species	Prod	Ht	Basal Area	Species	Prod	Ht	Basal Area

PARTIAL CUT VOLUME

Species	Prod	Ht	Basal Area	Species	Prod	Ht	Basal Area